

ORIGINAL

6499 a&b

6499 a&b

Form 504 Rev. April 1935 DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
<i>Topographic</i> - <i>Hydrographic</i>	Sheet No. <i>H-6499 a&b</i>
U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES OCT 19 1940 Acc. No. _____	
State <i>Texas</i>	
LOCALITY <i>Gulf of Mexico</i> OFFSHORE <i>Brazos Santiago</i> <i>Offshore, Galveston to Brownsville</i>	
1939	
CHIEF OF PARTY <i>G. C. Mattison</i>	

U. S. GOVERNMENT PRINTING OFFICE

PROJECT H. T. 214

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 241

H6499 a

REGISTER NO. H-6499 a

State TEXAS

General locality NORTHWEST GULF OF MEXICO

Locality Offshore, Galveston to Brazos Santiago
OFF TEXAS COAST

Scale 1:240,000 Date of survey MAY - AUGUST, 1939

Vessel HYDROGRAPHER

Chief of Party G. C. MATTISON

Surveyed by L. P. RAYNOR, E. R. MCCARTHY, E. B. LEWEY,
J. C. TRIBBLE JR., C. W. CLARK, J. W. STIRNI

Plotted
Protracted by E. R. MCCARTHY

Soundings penciled by M. J. TIMMERMAN

Soundings in fathoms & feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by Harold W. Murray

Verified by " Jan.

LETTERS TO FIELD PARTY DATED FEBRUARY 20
AND MARCH 2, 1939 - 22AB 1995-HY4, 19

Remarks:

PROJECT H. T. 214

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 241

REGISTER NO. 6499-b

H6499 b

State Texas

General locality Gulf of Mexico

Locality Offshore, south of Galveston

Scale 1:80,000 Date of survey May - August, 19 39

Vessel Hydrographer

Chief of Party G. C. Mattison

L. P. Raynor; E. R. McCarthy; E. B. Lewey
Surveyed by J. C. Tribble, Jr.; G. W. Clark; J. W. Stirni

~~Plotted~~ Plotted by E. R. McCarthy

Soundings penciled by M. J. Timmerman

Soundings in fathoms & feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

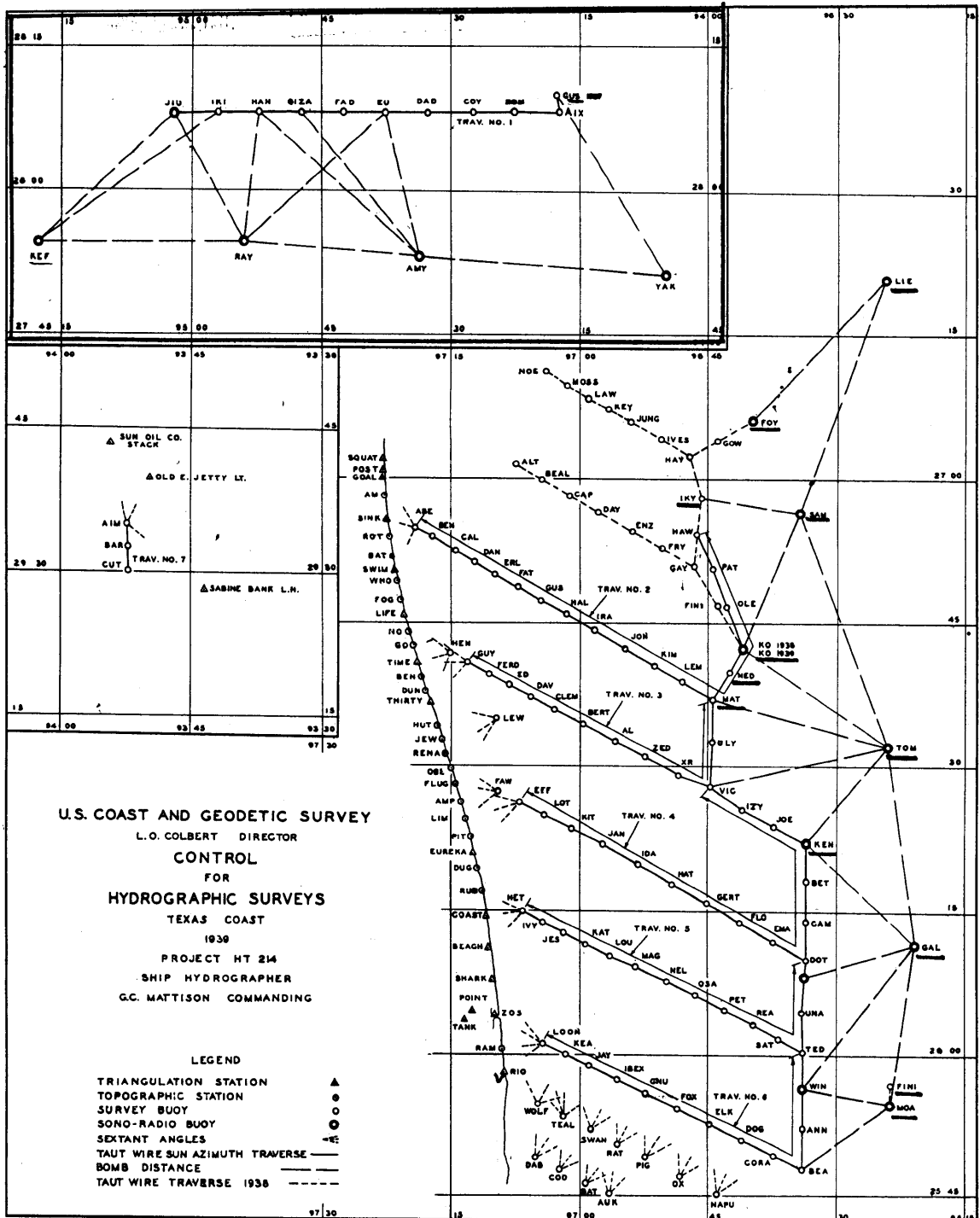
Inked by Harold W. Murray

Verified by "

Letters to field Party dated Jan. February 20
Instructions dated and March 2, 1939 - 22AB 1994-HY4, 19

Remarks:

CONTROL FOR SHEET 6499 SHOWN IN RED.



PROJECT HT-214

DESCRIPTIVE REPORT

To Accompany

SHEET H-6499²(1939)

(Field 241)

USC & GSS HYDROGRAPHER

G. C. MATTISON, COMMANDING

AUTHORITY

Supplemental authority contained in the following letters to the Commanding Officer:

January 20, 1939 - 22 AB 1995 HY 4

March 2, 1939 - 22 AB 1995 HY 4

See also letters from the Commanding Officer to the Director under following dates:

January 12, 1939; March 10, 1939; March 14, 1939.

PURPOSE

To extend the surveys beyond the hundred fathom curve to the outermost limits of the published 1100 series of charts.

LIMITS

Latitude 25° - 50' north and west to the approximate 100 fathom curve between Longitude 94° - 05' and 96° - 20'. Some check lines and development lines were run over previously surveyed areas principally to close in a dead reckoning line.

GENERAL STATEMENT.

This report will be divided into two parts. Part I will deal with the plotting and methods of adjustment and is meant principally for the cartographer. Part II* will be a discussion of the methods and results and is meant principally for the Field Engineers Bulletin.

* PART II TO BE SUBMITTED SEPARATELY

CONTROL

Control consisted of two lines of sono radio buoys (sonics) one of which was located inside the 100 fathom curve on the west limits of the sheet and the other in a corresponding position on the north limits of the sheet.

The west line was located by bomb distance from ~~taut~~ wire - sun azimuth traverse used for control on Sheet H-6497-8⁽¹⁹³⁹⁾ and the north line by bomb distances from a dead end traverse beginning at buoy Gus 1937 combined with the depth curves on Sheets H-6291⁽¹⁹³⁷⁾, 6292⁽¹⁹³⁷⁾, 6404.⁽¹⁹³⁸⁾

There were few observations of temperature and salinity made in the north section of the sheet. The velocities used were those determined in the areas of Sheet H-6497-8⁽¹⁹³⁹⁾. This is not correct but no other procedure was practical.

$\phi 27^{\circ}50', \lambda 95^{\circ}20'$
Buoy "Kef" of the north line was located by ~~these~~ three arcs that intersected in a point. However, the location fell about 0.3 mile north of the depth curves on which the buoy was planted. Due to the uncertainty of the velocities used and because it was necessary to coordinate the present and previous surveys, the location was moved south to fit the depth curve and that position accepted. No correction was made for scope.

The remaining sonics on the line were controlled east and west by bomb distances and north and south by depth curves and worked out quite satisfactorily as the easterly buoy (Yak) was located independently from shoals to the eastward and the difference between the two locations was less than the scope of the buoy.

The control for the north line was plotted on a 1:80,000 scale. Abstracts of bomb distances and the details of plotting each ~~sheet~~^{buoy} are filed with the records pertaining to the sheet. Geographic positions of all the hydrographic signals are given in the report, "Location of Hydrographic Signals, 1939".

METHODS - GENERAL

Soundings were taken with a Dorsey III fathometer. The transceiver was used, if possible, to a depth of 200 fathoms and the oscillator over this depth. The soundings taken with the transceiver were more reliable and are correct to one fathom when read on the 20 fathom or 100 fathom dial, and 5 fathoms when read on the 1000 fathom dial. The soundings taken with the oscillator are correct within 5 fathoms at the best, and depending on the bottom, are often not to be considered correct within 10 fathoms of a mean.

The general scheme of lines was laid out in the office following some correspondence on the subject (see letters listed under "Authority"). It proved to be impractical to follow the scheme entirely, although the greater number of lines were run as indicated.

The theory behind the system was that the lines were to be controlled on the inner ends by R. A. R. and depth curves, on the outer end by astronomical fixes, and at intermediate points by crossings. As the ship based at Galveston, it was intended to run most lines on trips to and from the working grounds off Padre Island and utilize an otherwise unproductive long run.

As it worked out, the lines at the west end were controlled principally by the crossing of the 100 fathom curve as determined on sheets H-6497-8, and the lines at the north end were controlled, in a great degree, by R. A. R., as the sonics were located more favorably for the reception of the bombs than those on the west.

It was seldom practical to obtain star fixes on the outer ends of the lines as the schedule was such that the ship left the working grounds for Galveston in the late afternoon or early evening and arrived at the north line of sonics the next morning. The ship left Galveston in the late evening, arriving at the north line of sonics at daylight, worked in the vicinity during the day, and left for the working grounds off Padre Island late in the afternoon. The greater number of sights were thus taken nearer to the inner than the outer ends. The sheet was necessarily controlled and the lines adjusted by crossings.

METHODS - DETAIL

Course.

Course was controlled by the gyro compass. The compass correction was determined by amplitudes as often as practical. The corrections determined during a trip were averaged and the average used for all days during that trip. The observed correction varied about 0.5° from a mean.

The course recorder was tried out but was found to be in need of repair and was not used. In practice, the course was set, the ship placed on automatic steering and the course ^{checked} ~~checked~~ several times during a watch.

Distance.

Distance was determined by Meridian Log, using a factor of 1.000. A taffrail log was used as a check but was read only to the nearest tenth and was never properly rated, so was used to interpolate distances when the Meridian Log was out of order.

The Meridian Log was rated on August 31, 1939. Prior to rating it had been struck by a submerged object which slightly bent the impeller blades. Shortly after rating and before a line was run, the impeller shaft wrung off and the spare mechanism was installed. This mechanism was used the remainder of the season and never rated.

Leeway.

The anemometer was used at the beginning of the season, but due to a lack of observations on the true direction of the wind, was of little value. Then, too, no observations were made to determine the leeway correction for the ship. It so happened that the weather was very good and the application of leeway necessary on few lines.

Current.

Current was observed at the beginning and end of most lines. The free float method was used; the float was dropped at a buoy, direction determined by gyro, and distance by vertical angle. Current was seldom applied more than ten miles from the point of observation.

Current was sometimes computed by plotting the dead reckoning against the R. A. R.

A 16' 2x4, 2' out of water, was used as a float.

RECORDS

Soundings were corrected for velocity, and in some cases, for index-draft-settlement. No tides were applied as the depths in general were well over fifty fathoms. Those lines in lesser depths were used only as tie-ins and the soundings are but incidental and add nothing to the value of the survey.

An abstract of R. A. R. and dead reckoning was kept independently of the sounding record on the bridge. In plotting, the abstract was checked against the record and the lines plotted from it. All velocities used and all current, closures, and crossing corrections or adjustments are shown on it. The sounding record was used only to plot the soundings.

A sliding scale of velocities was used in the constantly changing depths. The bottom velocities for the particular time of the year were used in depths under 250 fathoms and a fixed velocity over that depth. Velocities were taken only to 5 meters per second. Due to the assumption of similar temperatures in the north section and the west section, to the scope of the buoy for which no correction was made, and to the uncertainty of the value in

great depths, a refinement to one meter per second was thought useless.

PLOTTING THE SHEET

An 1:80,000 enlargement of the northeast section of the sheet was first made, the taut wire buoys plotted, then the sonics were located and fitted to the depth curves of previous surveys.

The inshore lines (inside of the 100 fathom ⁽¹⁹³⁷⁾ curve) were then plotted and fitted to the bromides of H-6291-2. Very little adjustment was found necessary.

All the hydrography that would fit on this sub sheet was then plotted, the R. A. R. controlled lines being first plotted and the other lines fitted to the crossings. The ends of those lines that continued offshore were transferred to the 240,000 scale sheet as fixed points.

On the 240,000 sheet, the short lines and R. A. R. controlled lines were first plotted and cross lines fitted to the soundings. The usual procedure on dead reckoning was to plot the fixed points (inshore ends of lines, bomb arcs, star fixes, sun fixes), then plot the dead reckoning using the gyro course corrected for error, and the Meridian Log distance, using a factor of 1.000. Closure was determined and distributed in proportion to time. The soundings were then plotted on tracing paper and checked against the cross lines. Arbitrary shifts were then made to make the crossings fit, bearing in mind that the shifts must be consistent. The best controlled lines were held fixed. This system of plotting resolved itself down to a ^{trial} time and error procedure and required the re-plotting of some lines as many as three times, in order to bring them in correct correlation.

The dead reckoning was shown by colors for course, current, closure, adjustment, crossing adjustment, etc. Bomb arcs were inked.

JUNCTIONS COMPARISONS WITH PREVIOUS SURVEYS

The sheet overlaps sheets 6291⁽¹⁹³⁷⁾, 6292⁽¹⁹³⁷⁾ and 6404⁽¹⁹³⁸⁾. The 100 fathom curve as defined on these sheets was used for control on 6499.3 + b⁽¹⁹³⁹⁾

Sheet 6404 (1938) + H-6499.3 + b (1939)

Crossings, as a rule, check very well. The following are poor (depths are in fathoms):

1. Latitude $27^{\circ} - 53\frac{4}{5}'$ - Longitude $95^{\circ} - 17.5$

51-1/2 on sheet 6404 plots on $50-5\frac{4}{5}/6$ (53-4H). Probably due to scope of buoy ~~53~~ crossing between 64-5J on same line 0.1 mile to the south checks very well. Accepted

2. Latitude $27^{\circ} - 52.8'$ - Longitude $95^{\circ} - 09.4'$

68% on 6404 plots on a $70-1\frac{1}{4}/6$ ($2\frac{5}{4}$ -6A). Probably due to location of line on A day. The line was controlled by a fix at the north end and the 50 and 100 fathom curves. A slight shift of 0.2 mile to the southeast would make all crossings good. Accepted

3. Latitude $27^{\circ} - 54.5'$ - Longitude $95^{\circ} - 07.4'$

$57\frac{4}{5}$ on sheet 6404 crosses a $57-2/6$ (25-6A). See notation on #2. There is a $1/2$ fm crossing at Latitude $27^{\circ} - 57.5'$ - Longitude $95^{\circ} - 04.5'$ (26-7A). Accepted

Sheet 6291 (1937) and H-6499b (1939)

The soundings on 6291 between buoys Ray and Amy and north of the 100 fathom curve are, as a rule, slightly deeper than those on 6499b. This is probably due to a difference in location. As the development on 6499b is equal to and better controlled than that on 6291, it is recommended that it be accepted over it. Diff. slight from charting viewpoint
Accept both surveys except as noted below. H.W.M.

1. There are some very poor crossings between positions 5-15 W on sheet 6291 (Longitude $94^{\circ} - 45'$). Soundings fail to cross by 15-21 fathoms. It is probably that these positions are controlled by dead reckoning and it is recommended that they be re-plotted and fitted to the soundings on sheet 6499b. Controlled by larc.
Sdgs expunged.
Replotting not warranted. H.W.M.

2. The soundings on 6291 between buoy Amy and the east limits of the sheet are somewhat scattered with numerous vertical casts. Agreement is fair and it is probable that the positions of the vertical casts are doubtful. A $94^{\circ} 33'$
A $94^{\circ} 15'$

~~The following poor depths are in fathoms.~~

3. 1. The line on Longitude $94^{\circ} - 23'$ (sheet 6291) checks fairly well with current work (80-12) to a depth of 85 fathoms. In greater depths there is serious disagreement. From the entire soundings on sheet 6291, it appears that the fathometer was giving trouble and it is recommended that the soundings from the 85 sounding south to the 117 sounding on the east side of the turn be rejected. (line 42-44F) Recommendation accepted.

Sheet 6292 (1937) and H-6499b (1939)

The soundings on sheet 6292 north of the 100 fathom curve agree fairly well. The differences are minor and are very probably due to slight differences in location.

The soundings south of the 100 fathom curve are in disagreement from 1 to 11 fathoms. As H-6499 is better controlled, it is recommended that the soundings on 6292 outside of the 100 fathom curve be re-plotted and fitted to crossings on 6499. ** in depths of 100 to 200 fms. Accepted.*

GENERAL

Due to failure of bombs to get through, some lines were run north past the hundred fathom curve to close in on the line of buoys in Latitude $28^{\circ} - 08'$.

The lines were fitted to crossings on sheets 6291, 6292⁽¹⁹³⁷⁾ and 6404⁽¹⁹³⁹⁾. Usually, it was impossible to make exact crossings and the lines were invariably fitted by depth curve rather than soundings.

These lines are listed below:

24-32 A (6291-6404)
11-17 G (6291)
46-50 T (6291)
39-47 V (6292)

DISCREPANCIES

The transceiver was used to depths of 200 fathoms when possible. The oscillator was used over this depth. Soundings with the oscillator could be read only to five fathoms and soundings within five fathoms of a mean should be considered a good crossing.

1-6 inclusive are on the ^{H-6499b} 80,000 scale and all others on the 240,000 scale. ^{H-6499a}

1. Latitude $27^{\circ} - 52.8'$ - Longitude $94^{\circ} - 09.4'$

Soundings between 25-6 A are about 2 fathoms shoaler on the crossings between 49-50 H and 61-2 J. A slight shift (0.2 mile southeast) would make all crossings good as well as the crossing on sheet 6404. Recommend A day be disregarded. *Accepted*

2. Latitude $27^{\circ} - 39.5'$ - Longitude $94^{\circ} - 46.3'$

36-7 R shows 217 where 47-8 W shows 245. The hundred fathom

dial was being used on R day and probably the 1000 fathom dial on W day. A slight shift of R day to the east and north would make the crossings check within 10 fathoms.

Omitted several deeper sdys.

3. Latitude 29° - 40.5' - Longitude 94° - 43'

Crossings at 43-4 T and 37-8 W ^{is} are 12 fathoms. Slight shift to eastward would make it good. *Accepted*

4. Latitude 29° - 41.2' - Longitude 94° - 31'

Soundings between 12-13 S cross 73-4 Z with 15 fathoms difference and 66-7 Z with 40 fathoms difference. Soundings were being read on both days on the thousand fathom dial. Apparently positions are very little in error as those on Z day were controlled by two bombs and on S day by one bomb. All other crossings on Z day in the vicinity are good so it is recommended that ~~ten~~ ^{the} soundings on S day be rejected. *Recommendation accepted*

5. Latitude 27° - 41.2' - Longitude 94° - 16'

187 fathoms (61-2 Z) crosses a 202 (27-8 Y). Both good locations. Slight shift would make crossing good. *Accepted*

6. Latitude 27° - 51.5' - Longitude 94° - 05.2'

Difference of 2 fathoms between soundings on 6 A' and 8-9 B'. ^{is} probably due to scope of buoy as there is no doubt about positions or soundings. *Accepted*

7. Latitude 27° - 00 - Longitude 96° - 03' to 96° - 10'

The crossings of 6-7 A with 14-15 L show differences of 20 to 50 fathoms. There were several misses on A day and it is recommended that L day be accepted over it. *L day accepted*

8. Latitude 26° - 38' to 39' - Longitude 96° - 05' to 12'

The crossings on 5-9 M and 34-6 N are in but fair agreement. (20-25 fathoms). Apparently the fathometer was working poorly as any adjustment that bettered one crossing tended to make the other worse. The same tendency is shown in the crossings at 137-138 W. *Accepted*

9. Latitude 26° - 09' - Longitude 96° - 09' to 16'

Soundings between 3-5 T and 144-5 W are in fair agreement. Those on W day vary from 10 fathoms less to 10 fathoms more than those on T day. *T day accepted*

10. Approximate Longitude 96° - 03'

There are several crossings on W day. Due to lack of control, this day from 123-143 was plotted after the soundings were plotted on all cross lines and was fitted to the soundings as well as possible. The line is chiefly valuable in showing the range of discrepancies as none of the positions on the E-W lines should be very far out since they were, as a rule, not more than 10-15 miles from control of some sort.

Range of soundings on the line was from 20 fathoms less to 20 fathoms greater than the cross lines. The crossings are listed below:

141 W,	- 20
139 W,	- 10
137 W,	- 15 + 20
136 W,	+ 15
133 W,	+ 15
131½ W,	+ 20

*General depths
300-500 fms.
Accepted*

11. Latitude 26° - 38', Longitude 95° - 42'; Lat. 26° - 37', Long. 95° - 27'

12-13 M 15 fathoms deeper than 33-4 Q and 15-16 M 15 fathoms shoaler than 88-9 U.

12. Latitude 27° - 02' - Longitude 94° - 53'

Crossings at 28-9 M with 79-80 U differ by 90 fathoms. From the soundings, it appears that either there were some very erratic soundings on M day or else the recorder was reading strays. It is recommended that the soundings on M day be rejected and those on U day be accepted, even though deeper. On U day, the bottom was changing slowly and the sounding could be easily followed. On M day, the bottom was changing faster and there were probably several strays.

M day omitted

13. Latitude 27° - 34' to 38' - Longitude 94° - 30' to 96° - 01'

Positions 99-123 W. See note on #10.

Soundings from 99-115 W cross quite well; those ^{west}~~east~~ of 115 not so well. See listing below:

115-6,	+ 15
116-7,	+ 20
118-9,	+ 20

COMPARISON WITH THE CHART

The soundings shown on the chart are few in number and were probably taken from a number of sources. Some are in good agreement but there is certainly doubt as to the location of all of them and it is recommended that they be disregarded.

BOTTOM CONFIGURATION

The bottom is surprisingly irregular and much different than might be supposed from the formation inside of the hundred fathom curve.

The west, northwest and central sections are comparatively regular except for a submarine shoulder located in Latitude $27^{\circ} - 05'$, Longitude $95^{\circ} - 42'$. The east, north and south central sections are of a different type of bottom and show several basins, troughs, ridges and knolls.

The depth curves were drawn at hundred fathom intervals, beginning at the one hundred fathoms. It will be noted that, in some instances, different interpretations were made on the smooth sheet and the boat sheet. It is believed that the curves shown on the smooth sheet are better but the developement is hardly close enough to consider that any curve is more than an approximation. The curves were placed on from a hydrographer's experience and point of view. Let the geologists make of it what they will!

*How can one
be just the best description
from such variable
conditions?
OK
5/24/41*

MISCELLANEOUS

Astronomical sights and positions are filed in three volumes. The R. A. R. and dead reckoning abstracts are filed in a three ring, loose leaf notebook with an index and description of the plotting for each day.

There are also a number of profiles filed with the sheet. These were made up in the middle of the season as an experiment to see if it were possible to detect any erroneous soundings. Due to the irregularity of the bottom, it was found impractical. The profiles are plotted with increasing depth toward the top.

The locations of the lines on the smooth sheet do not necessarily follow those on the boat sheet. The boat sheet locations should be considered as a preliminary plotting.

The lines tying into buoys LIE and FOY were not compared with sheet 6405. (1938) Agreement OK. H.W.M.

STATISTICS

Statute miles sounding lines:	4922.4
Number of soundings:	28793
Number of positions:	1353

Respectfully submitted,

ER. Mc Carthy

E. R. McCarthy,
Lieutenant (j. g.),
U. S. C. & G. Survey.

APPROVED & FORWARDED

J. C. Mattison

J. C. Mattison
LT-COMD'R C&GS

Commanding HYDROGRAPHER

NOTES BY CHIEF OF PARTY

The field work on this sheet was done under the supervision of the chief of party. The office work was done under the supervision of Lieut. McCarthy. Most of the smooth plotting was completed in the Pensacola processing office.

An examination of the smooth sheet will show that the astronomical positions (indicated by red asterisks) are well distributed over the outer portions of the sheet. The northerly and westerly ends of the sounding lines are fixed by buoy positions. The sounding lines in the immediate vicinity of these fixed positions may be said to be well located. Lieut. McCarthy has done an excellent job in correlating the intermediate and cross lines to fit these fixed positions. It was thought at the time this survey was made, that the principal indeterminate factor affecting the final plotting would be the variable currents experienced outside the 100-fathom curve. The numerous cross lines would serve as a valuable aid in adjusting the lines for current. However, another variable factor has since become evident. Soundings taken with the 324 oscillator are apt to be erratic. This would affect the value of the crossings. Although the vertical casts all checked the oscillator soundings in this area, it is very probable that some incorrect soundings were recorded. This is indicated by the difficulty in making adjustments of lines to fit crossings in several places.


During the 1940 season it was noted while working off the Mississippi River delta that the oscillator would sometimes give returns from a sub-strata instead of reflections from the top layer of apparently softer material. Such returns may account for some of the discrepancies. Since installation of the supersonic we have noted other indications of erratic returns from the oscillator, apparently inexplicable.

*Depths on present
survey seem too
deep for this
contention. H.W.M.*

It is believed that the greater proportion of the soundings on this sheet are correct. Soundings in a few areas may have to be questioned, but there are sufficient areas where crossings check and the soundings verified, so that an adequate chart can be compiled.

Owing to the lack of information regarding currents outside the 100-fathom curve in this area, it will be logical at some future time, to make a current survey using deep-sea current buoys. It would be very easy at that time to include sonic buoys in the scheme and run a few strategic sounding lines to determine the trend of the depth curves, and check some of the soundings.

The sheet and records have been examined and are approved. No additional field work is necessary for charting purposes.


G. C. Mattison,
Chief of Party.

FATHOMETER CORRECTIONS.

Corrections were used as given in the following tables -
see also "Report on Serial Temperatures 1939". No corrections
were entered in depths over 200 fathoms.

T & S	May 8	May 22	June 20
Correction	May 18	June 16	Sept. 12
Ft.	Fms. Ft.	Fms. Ft.	Fms. Ft.
+ 3.0 To	32 5 ✓	-	29 2 ✓
3.5	38 0 ✓	31 4 ✓	33 0 ✓
4.0	45 4 ✓	39 0 ✓	34 0 ✓
5.0	56 3 ✓	50 4 ✓	35 0 ✓
6.0	68 5 ✓	65 3 ✓	42 0 ✓
7.0	84 0 ✓	84 0 ✓	51 0 ✓
8.0	102 3 ✓	110 0 ✓	60 0 ✓
9.0	124 0 ✓	142 0 ✓	76 0 ✓
10.0	157 0 ✓	200 0 ✓	101 0 ✓
11.0	200 0 ✓	-	140 0 ✓
12.0	-	-	200 0 ✓

VALUES FOR SETTLING
+0.8' AT FULL SPEED
AFTER TRANSCIEVER USED
AND DORSEY III FATHO-
METER

IDS CORRECTION

SHEET #241

Date	Day	I Ft.	D Ft.	S Ft.	I/D/S	Used Values
May 12 ✓	A	-2.1	0.1	+0.8	- 1.2	- 1.0 ✓
May 13 ✓	B		0.0		- 1.3	- 1.0 ✓
May 14 ✓	C		-0.1		- 1.4	- 1.0 ✓
May 15 ✓	D		-0.3		- 1.6	- 1.0 ✓
May 16 ✓	E		-0.4		- 1.7	- 1.0 ✓
May 17 & 18 ✓	F		-0.4		- 1.7	- 1.0 ✓
May 23 ✓	G	Ditto	0.9	Ditto	- 0.4	- 1.0 ✓
May 24 & 25 ✓	H		0.8		- 0.5	- 1.0 ✓
May 25 & 26 ✓	J		0.7		- 0.6	- 1.0 ✓
May 27 ✓	K		0.6		- 0.7	- 1.0 ✓
May 28 ✓	L		0.5		- 0.8	- 1.0 ✓
June 1 ✓	M		0.3		- 1.0	- 1.0 ✓
June 7 ✓	N		0.5		- 0.8	- 1.0 ✓
June 16 ✓	P		-0.1		- 1.4	- 1.0 ✓
June 21 ✓	Q		0.7		- 0.6	- 1.0 ✓
June 30 ✓	R		-0.1		- 1.4	- 2.0 ✓
July 8 ✓	S		0.4		- 0.9	- 1.0 ✓
July 15 ✓	T		-0.1		- 1.4	- 2.0 ✓
July 21 ✓	U	Ditto	0.7	Ditto	- 0.6	- 1.0 ✓
July 29 ✓	V		0.1		- 1.2	- 1.0 ✓
Aug. 4 ✓	W		0.5		- 0.8	- 1.0 ✓
Aug. 12 ✓	X		0.4		- 0.9	- 1.0 ✓
Aug. 18 ✓	Y		0.7		- 0.6	- 1.0 ✓
Aug. 23 ✓	Z		0.0		- 1.3	- 1.0 ✓
Aug. 24 ✓	A ¹		-0.1		- 1.4	- 2.0 ✓
Sept. 9 ✓	B ¹		-0.1		- 1.4	- 2.0 ✓

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Refer to: 80-LEF

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

February 17, 1938

To: Commanding Officer,
U. S. Coast and Geodetic Survey,
Ship HYDROGRAPHER,
Galveston, Texas.

From: The Acting Director,
U. S. Coast and Geodetic Survey.

Subject: Plotting R.A.R. Sheets.

After carefully considering your 1936 practice in the plotting of R.A.R. sheets (that is, the omission of distance arcs and position intersection arcs), this office is of the opinion that certain distinct advantages accrue from showing such information on the final sheet.

You will, therefore, be guided by the following instructions relative to the plotting of R.A.R. smooth sheets.

1. Distance arcs shall be drawn with black pencil and shall not be inked. It will be necessary to use a fairly hard pencil for this purpose in order that excessive smudging will not take place while plotting the survey. The appropriate station names should be pencilled along the various arcs as frequently as needed for identification as well as the distances in meters or times in seconds, whichever the case may be.

2. The station symbols and names shall be inked; preferably using a different color for each station occurring on any one sheet. Where necessary to duplicate colors because of the large number of stations, stations given the same color should be selected with a view to eliminating confusion in so far as possible.

3. Position intersection arcs shall be inked in the color of their respective stations.

4. On your 1937 R.A.R. surveys which may have been smooth plotted without showing distance and intersection arcs, the preliminary aluminum mounted sheets should be retained until the surveys have been reviewed in this office.

(Signed) J. H. Hawley

Acting Director.

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Refer to: 22-AB
1995 HY 4

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

January 22, 1938

To: The Commanding Officer,
U.S.C. & G.S. Ship HYDROGRAPHER,
P. O. Box 565,
Galveston, Texas.

From: The Acting Director,
U. S. Coast and Geodetic Survey.

Subject: Depth Units for Offshore Surveys.

Referring to your letter of January 13, 1938, you will please pencil the soundings on your offshore sheets in fathoms and sixths of fathoms, with the denominator of the fraction omitted. In other words, the method will be the same as you have used on your boat sheets, with the addition of the fraction bar beneath the number of feet in excess of the whole number of fathoms. This method of plotting the soundings shall be continued offshore to depths where, because of lack of accuracy of the fathometer, the fraction becomes a meaningless refinement.

For the reason stated in the last paragraph of your letter, it is desired that the soundings on hydrographic sheet Field No. 84 be plotted in feet.

(Signed) J. H. Hawley

Acting Director.

LCC
H.R.C.

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 17, 1940

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. H. R. Edmonston.

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 6499 — 6499^a
6499^b

Locality Offshore, Galveston to Brazos Santiago, Gulf of Mexico

Chief of Party: G. C. Mattison in 1939
Plane of reference is mean low water
ft. on tide staff at
ft. below B. M.

Note: Deep offshore soundings and no tide reducers are necessary.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. **H6499** a & b

Name on Survey

On Chart No.
On previous survey No.
On U. S. quadrangle Maps
From local information
On local Maps
P. O. Guide or Map
Rand McNally Atlas
U. S. Light List

A B C D E F G H K

Galveston

Brazos Santiago

Names underlined in red approved
by L. Heck on 4/27/41

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Remarks

Decisions

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Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6499** a & b

The following statistics will be submitted with the
cartographer's report on the sheet:

Number of positions on sheet	13 53.
Number of positions checked	✓
Number of positions revised	✓
Number of soundings recorded	287 93.
Number of soundings revised	..86.
Number of soundings erroneously spaced	✓
Number of signals erroneously plotted or transferred	✓

Date: *June 19, 1941*

Verification by *Harold W. Murray*

Time: *115 hrs.*

Review by *Harold W. Murray*

Time: *7 hrs.*

HYDROGRAPHIC SURVEY NO. **H6499** a & b

Smooth Sheet One for H-6499a : One for H-6499b

Boat Shoet **Yes**

Records; Sounding 12 Vols., Wire Drag Vols., Bomb 2 Vols.

Descriptive Report **Yes**

Title Sheet One for H-6499a; One for H-6499b

List of Signals	No
-----------------	----

Landmarks for Charts (Form 567) No _____

Statistics	No
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Approved by Chief of Party **Yes** _____

Recoverable Station Cards (Form 524) **None**

Special Chart for Lighthouse Service No
(Circular Nov.30, 1933)

Hydrography: Total Days --- ; Last Date -----

Remarks _____

Journal of Management Education 36(7) 809–826

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

No. H **H6499** a & b
~~xxxxxx~~

received Oct. 22, 1940
registered Oct. 23, 1940
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20	✓ <i>ME</i>		
✓ 22		<i>Ph</i>	<i>This is the first of the half offshore sheets to come in. (1:240,000 scale)</i>
24			
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63			
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83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

✓ *TBR*

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY NO. 6499a&b (1939) FIELD NO. 241

Texas, Gulf of Mexico, Offshore, Galveston to Brazos Santiago
Surveyed in May - August 1939, Scale 1:240,000
Instructions dated January 20 and March 2, 1939 (HYDROGRAPHER)

<u>Soundings:</u> Fathometer	<u>Control:</u> Sono-radio buoys
	Dead reckoning
	Astronomic sights
	Crossline agreement

Chief of Party - G. C. Mattison
Surveyed by - L.P.Raynor, E.R.McCarthy, E.B.Lewey,
J.C.Tribble, Jr., C.W.Clark, J.W.Stirni
Protracted by - E. R. McCarthy
Soundings plotted by - M. J. Timmerman
Verified and inked by - Harold W. Murray
Reviewed by - Harold W. Murray, June 20, 1941
Inspected by - H. R. Edmonston

1. Shoreline and Signals

- a. This is an offshore survey and no shoreline is shown.
- b. Details of the control are given in the Descriptive Report, pages 1 to 5. A portion of this material has been submitted separately. The final adjustment of this work required painstaking care.

2. Sounding Line Crossings

The arrangement of the sounding lines on the present survey has resulted in a series of abundant crossings. Agreement of crossings with regard to flexibility of control is very good. Such discrepancies as were noted are listed in the Descriptive Report, pages 6 to 9.

3. Depth Curves

Depth curves are shown in pencil on the smooth sheet in intervals of 25, 50 and 100 fathoms, depending on the nature of the bottom. The 100-, 200- and 500-fathom curves were inked. As regards adequacy of hydrography,

a statement in the Descriptive Report, page 10, summarizes the problem very nicely by saying that the bottom is surprisingly irregular and that the development is not sufficiently close to consider that the curves are more than just an approximation.

4. Junctions with Contemporary Surveys

- a. Junctions are made on the west and north with H-6497 (1939), H-6498 (1939), H-6405 (1938), H-6404 (1938), H-6291 (1937), H-6292 (1937) and also with the present survey work H-6499a (1939) and H-6499b (1939).

The present survey consists of two sheets; one on a scale of 1:240,000 (H-6499a) and one on a scale of 1:80,000 (H-6499b). The inshore sheets are on scales of 1:80,000 or 3 times larger than H-6499a and the junctions are quite extensive as over 20 lineal feet are involved. It is therefore gratifying to note that such general good agreement exists. Some discrepancies would naturally exist and these are discussed in the Descriptive Report, pages 5 to 7. In addition, mention is made of a few soundings on H-6499a in Lat. 27° 45', Long. 95° 30' which vary slightly deeper than those on H-6404. These deeper soundings (depths ranging from 50 to 100 fathoms, uniform bottom) were omitted on the smooth sheet.

- b. The junction on the east will be considered when that work is received from the field.

5. Comparison with Prior Surveys

H-1350 (1875-77) and H-1352 (1875-77), scales 1:600,000

These small scale reconnaissance surveys contain widely spaced sounding lines extending across the present survey. Agreement of depths is only fair because of the weakness of control on the old survey. The present survey is adequate to supersede these old soundings but the bottom characteristics should be retained. ✓

6. Comparison with Chart 1117 (New Print date April 14, 1941)

Hydrography shown on the chart originates with surveys discussed in previous paragraphs of this review. This includes the present survey which was applied to the chart prior to verification.

7. Compliance with Instructions for the Project

The survey complies with the instructions for the project.

8. Condition of Survey

- a. The sounding records are neat and legible and conform to the requirements of the Hydrographic Manual.
- b. The plotting of positions and soundings is exceptionally accurate.
- c. The Descriptive Report is quite comprehensive in its scope and yet concise in the details discussed. The detailed consideration of junctions and discrepancies is particularly commendable.

9. Additional Field Work Recommended

The present survey is adequate for ordinary offshore charting purposes but as noted in the Descriptive Report, page 10, the bottom was found to be surprisingly irregular and the depth curves based on the present limited development are but approximations.

10. Superseded Surveys

H-1350 (1875-77) In part, except bottom characteristics
H-1352 (1875-77) " " " " " " ✓

Examined and approved:

Thos B Reed

Chief, Surveys Section

J. S. Braden

Chief, Division of Charts

C. H. Green

Chief, Section of Hydrography

G. Thude

Chief, Division of Coastal Surveys

Applied to chd. 1007 - March. 1941 - D.S.
Applied to chart 1116 April 28, 1944 L.A.M. (after review)